

SECTION 07550

MODIFIED BITUMINOUS MEMBRANE ROOFING (SBS)

LANL MASTER CONSTRUCTION SPECIFICATION

When editing to suit project, author shall add job-specific requirements and delete only those portions that in no way apply to the activity (e.g., a component that does not apply). To seek a variance from applicable requirements, contact the LEM discipline POC.

When assembling a specification package, include applicable specifications from all divisions, especially Division 1, General Requirements.

Delete information within “stars” during editing.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Membrane roofing, sub-base, adhesives, board insulation, separation board, flashing, and accessories.

1.2 RELATED SECTIONS

- A. Comply with Section [07300](#), Roofing General Provisions.

PART 2 PRODUCTS

2.1 PRODUCT OPTIONS AND SUBSTITUTIONS

- A. Comply with Section [01630](#), Product Options and Substitution.

2.2 ACCEPTABLE MANUFACTURERS OF MEMBRANE MATERIAL

- A. Environmental Roofing Systems, Inc.
- B. GAF.
- C. Garland Co., Inc.
- D. Soprema, Inc.
- E. Tremco, Inc.
- F. US INTEC.

Note: No substitutions for the manufacturers identified above will be permitted.

2.3 MEMBRANE AND ASSOCIATED MATERIALS

- A. Weathering (Cap) Sheet: White granule surfaced, Styrene Butylene Styrene (SBS) modified asphalt membrane, Class A fire rated, complying with the following minimums:
1. Thickness: 160 mils.
 2. Reinforcing Scrim: 100 percent polyester.
 3. Exposed Face: White granules.
- B. Base Sheet: 100 percent polyester Styrene Butylene Styrene (SBS) asphalt modified membrane.
- C. Cold Process Asphalt: Styrene Butylene Styrene (SBS) modified asphalt cold process.
- D. Hot Process Asphalt: Styrene Ethylene Butylene Styrene (SEBS) modified asphalt

2.4 MATERIALS SPECIFICATIONS

A. SBS WEATHERING SHEET AND BASE FLASHING

Material Property	Testing Standard	Typical Values
Tensile Strength at 77°degree F	ASTM D2523	129MD 87XD
Elongation	ASTM D412	34MD 29XD
Asbestos Content	EPA 600/MA-82-020	0%
Fire Resistance	ASTM E108	Class A
Thickness	ASTM D5147	160 mil (4nun)
Impact Resistance	ASTM D3746	40mm max
Reinforcing Core		180 gni/m 2 polyester

B. BASE SHEET - POLYESTER REINFORCED SEBS/SBS MODIFIED BASE SHEET

Material Property	Testing Standard	Typical Values
Tensile Strength	ASTM D146	105 lbf MD 75 lbf. XMD
Elongation	ASTM D412	60% MD 70% XMD
Thickness	ASTM D1777	100 mils
Cold Flexibility	ASTM D5147	-13-F (-25- C)
Asbestos Content	EPA 600/M4-82-020	0%
Fire Resistance	ASTM E108	Pass, Class A
Membrane Reinforcement		Polyester 180 gm/ni2

2.5 SUB-BASE

A. SBS asphalt impregnated polyester base sheet supplied by the primary membrane manufacturer.

B. RELATED MATERIALS

1. All Materials: As approved by the membrane system manufacturer:
2. Asphalt Primer: Quick drying
3. Hot Applied Asphalt: ASTM D312, Type III or IV.
4. Cold Applied Elastomeric Mastic: SBS modified.
5. Mastic Reinforcing Fabric: Fiberglass or polyester.

2.6 ADHESIVE MATERIALS

A. Membrane Adhesives: As recommended by membrane manufacturer.

B. Thinner and Cleaner: As recommended by membrane manufacturer, compatible with sheet membrane.

2.7 BOARD INSULATION AND SEPARATION BOARD

A. Comply with Section 07212, Board Insulation.

B. As approved by membrane manufacturer.

2.8 FLASHINGS

A. Comply with Section 07620, Sheet Metal Flashing and Trim.

B. Base flashings: Same material as weathering sheet.

C. Penetration Flashings: Pre-manufactured penetration seals, cartwheel flashing using weathering sheet, or a polyester, or fiberglass mesh reinforced five course flashing using rubber modified plastic cement.

2.9 ACCESSORIES

A. Termination Bar: 1 inch x 1/4 inch aluminum bar employing appropriate cadmium plated steel screws, 1/4 inch x 1-1/2 inches, Con-Sert System manufactured by DFS/USA or approved equal.

B. Insulation Fasteners: Appropriate for purpose intended and approved by Factory Mutual and system manufacturer; length required for thickness of material plus metal washers.

- C. Sealant: As recommended by the membrane manufacturer and in compliance with Section 07900, Joint Sealers.
- D. Roof Edging: 24 gage sheet metal [galvanized or coated with membrane material].
- E. Scuppers: New as specified in Contract documents.
- F. Drains: New as specified in Contract documents.
- G. Wood Nailers: Install treated wood nailers at perimeter of entire roof and around such other roof projections and penetrations as specified in Contract documents. Wood shall be #2 or better, treated fire retardant lumber. Creosote and asphaltic preservatives are prohibited. Height of nailers shall match insulation thickness or as indicated on Drawings. Firmly anchor nailers at maximum spacing of 12 inches unless noted otherwise on Drawings and capable of resisting a force of 300 pounds per lineal foot in any direction. Provide 1/2 inch expansion spaces between lengths of nailers.
- H. Miscellaneous Fasteners and Anchors: In general, fasteners, anchors, nails and straps shall be zinc-coated steel, galvanized, or stainless steel and cadmium-free. Fasteners and anchors shall have minimum embedment of 1-1/2 inch and shall be approved for such use by fastener manufacturer and membrane manufacturer.
- I. Sheet Metal Accessory Materials: ASTM A653, 0.20 percent copper, G90 hot-dipped galvanized, 24 gage or heavier.
- J. Expansion Joint Covers: Provide manufacturer's prefabricated units of neoprene with aluminum fastening edges fastened in accordance with conditions present. Set edges over polyester base sheet and set in mastic with edge overlaid with SBS cap sheet.

PART 3 EXECUTION

3.1 INSTALLATION OF BOARD INSULATION AND SEPARATION BOARD

- A. Comply with Section [07212](#), Board Insulation.

3.2 INSTALLATION OF MEMBRANE FLASHING AND STRIPPING

- A. Substrate shall be smooth and free of dirt and debris.
- B. Prime area shall be flashed as recommended by manufacturer. Allow primer to dry so area is tack-free.
- C. Install SBS-modified bituminous flashing at cant strips and other sloping and vertical surfaces, at roof edges, and at penetrations through roof. Install 1 ply of flashing sheet material by mopping substrate and back of flashing sheet with Type III or IV asphalt and embedding flashing solidly against substrate. Extend flashing minimum 6 inches onto SBS-modified bituminous sheet roofing. Fasten top edge of base flashing at maximum spacing of 6 inches on center.

- D. Install SBS-modified bituminous stripping where metal flanges are set on roofing. Install 1 ply of SBS-modified bituminous stripping in a continuous mopping to Type III or IV asphalt and extend stripping a minimum of 6 inches onto roof membrane.
- E. Apply membrane flashing from low point of roof to high point so that all laps shed water. As membrane flashing is being applied, press firmly against substrate (brace if necessary) to maximize adhesion. Take particular attention while flashing is being installed to prevent possible tenting that is a result of stress put on membrane when applied improperly.
- F. Projections and Extension Through Roof: Install all pipes, vents, ducts, stacks, and openings through roof deck before the roofing is applied. Projections shall not be constructed through perimeter flashing.
- G. Flash pipe penetrations minimum 8 inches above roofing membrane, and terminate with stainless steel hose clamp with sealant applied along top edge. Factory fabricated pipe seals and roof membrane shall be welded. Install a buffer layer of membrane between hose clamp and flashing sheet to avoid damage. Do not use lead flashing.
- H. Roof Drains: Set on double base sheet and SBS cap sheet membrane anchoring through to structure below.
- I. Install other accessories per manufacturer's instructions and National Roofing Contractor's Association (NRCA) construction Details as applicable.

END OF SECTION